

### 1. Introduction:

The soil resources of an area are one of the most important elements of the natural resources base. Soils like other agro-biodiversity components in the occupied Palestinian territory are distinguished for the high range of variety in type and nature (Isaac, *et al.*, 2007). The major soil associations in the oPt are Terra Rosa and Brown Rendzinas; dominating the Central Highlands of the West Bank, Brown Rendzinas and Pale Rendzinas are found to the north and south of the mountain ridge, in Tubas, Qalqilyia and Hebron Governorates, and also in regions of the Eastern Slopes. Grumosols are also found in the far north and far west of the West Bank, coinciding with low-lying areas that enjoy a more temperature climate than other parts of the highlands (Isaac, *et al.*, 2011).

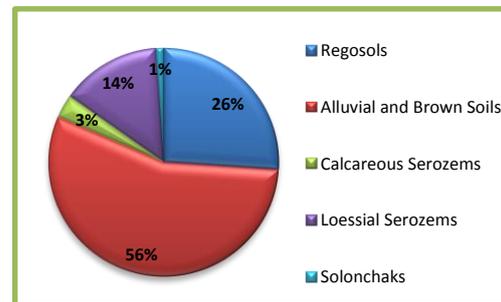
The project targeted areas Jericho and Al 'Auja located in Jericho and Al-aghwar Governorate in the West Bank. They located in one agro-ecosystem the Jordan valley agro-ecological zone. The Jordan Valley is a narrow strip between the Eastern Slopes and the Jordan River. It is 70 km long and drops to about 400 m below sea level near the Dead Sea. Rainfall is low (100 – 200) mm/year, winters are mild and summers hot. Soils are sandy and calcareous. This zone is the most important irrigated area in the West Bank. However without access to water this region would be a desert (Dudeen, 2001).

### 2. Soil Types:

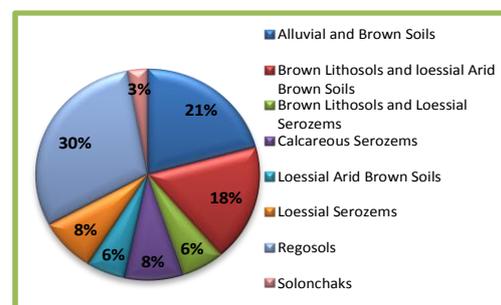
Figures 1 and 2 show the main soil associations in the targeted localities Jericho and Al Auja, while map 1 shows the distribution of each soil

association in Jericho and Al Auja (ARIJ, 2013).

**Figure 1: main soil types (%) in Jericho locality**



**Figure 2: main soil types (%) in Al Auja locality**



The figures show that nine soil associations can be distinguished in the targeted area, a brief description of each type, as the following:

#### 1. Calcareous Serozems

This type of soil mainly formed as a result of the flooding of the Jordan River. It covers an area of about 1,910 dunums in Jericho and 9025 dunums in Al 'Auja (ARIJ, 2013), and is originally formed from limestone, chalk and marl. The vegetation is hosts restricted to *Salsola vermiculata var vilosa* and its current land use is limited to winter grazing. The American great group classifications that represent this soil are *Xerochrepts*, *Calciothids* and *Gypsiortids* (Isaac, *et al.*, 1995).

#### 2. Regosols

It is found as badlands along terrace escarpments in the Jordan Valley,

covering an area of approximately 15262 dunums in Jericho and 31749 dunums in Al 'Auja (ARIJ, 2013). The soil parent materials are sand, clay and loess. The soil dominant vegetation covers are *Anabasis articulata*, *Salsola vermiculata* and *Salsola tetradra*, and are used primarily for grazing. The American great group classifications that represent this soil are Xerochrepts, Calciothids and Gypsiethids (Isaac *et al.*, 1995).

### 3. Alluvial and Brown Soils

This type of soil covers an area of about 32,491 dunums in Jericho and 22,009 dunums in Al Auja (ARIJ, 2013). It is exist of alluvial fans and plains, formed as a result of erosion of calcareous silty and clayey materials. This soil type supports Herbaceous vegetation of desert annual halophytes and glycophytes and responds well to irrigation, producing various crops, mainly subtropical and tropical fruits, such as citrus, bananas, and dates, as well as winter vegetables. The American great group classifications that represent this soil association are Haplargids and Camborthids (Isaac *et al.*, 1995).

### 4. Loessial Serozems:

This type of soils covers an area of approximately 8,286 dunums in Jericho and 8,633 dunums in Al Auja (ARIJ, 2013). The soil parent materials are loessial sediments, gravel and highly calcareous loamy sediments. Its major vegetation cover is an association of the *Hammada scoparia*. Most of the area covered by this soil us used for grazing and only part of it is dry-farmed. There are also some

irrigated orchards. The American great group classification that represents this soil is Haplargids (Isaac *et al.*, 1995).

### 5. Solonchalks

This type of soil covers an area of about 639 dunums in Jericho and 3,060 dunums in Al 'Auja (ARIJ, 2013). It occupies the drainage valleys and closed basins in Jericho district in general, where the groundwater table in near the soil surface. The soil parent rocks are recent alluvial deposits ranging in texture from sand to clay. Its major vegetation cover is halophytic with species of *Tamarix*, *Suaeda*, and *Nitraria* being dominant. Without proper drainage this soil is of almost no agriculture value (Isaac *et al.*, 1995).

### 6. Brown Lithosols and Loessial Arid Brown Soils

This type found in Al 'Auja area and it covers area of about 18932 dunums (ARIJ, 2013). It founds mainly on steep rocky and eroded slopes, Brown lithosols are found in the pocket among the rocks while Loessial arid brown soils are found on flat hilltops, plateau and foot-slopes. The parent rocks of this soil association are chalk, marl, limestone and conglomerates. Its major vegetation cover is *Artemisia herba-alba*. The American great classifications that represent this soil are Haploxeralfs and Xerochrepts (Isaac *et al.*, 1995).

### 7. Brown Lithosols and Loessial Serozems:

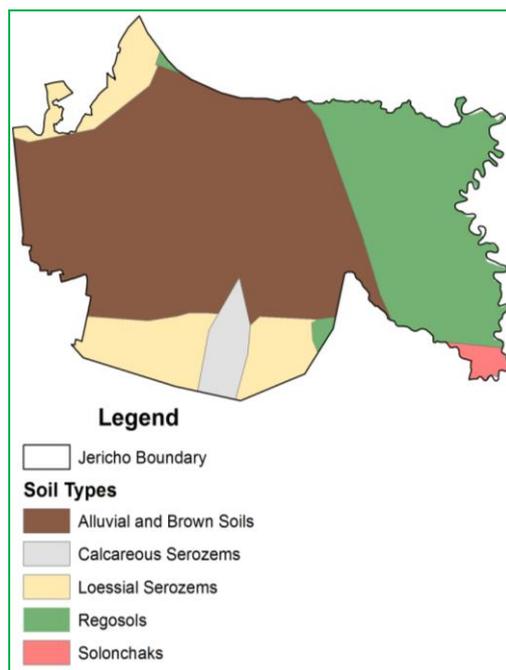
This type found in Al Auja area and covers an area of approximately 6,474 dunums (ARIJ, 2013). This soil is originally formed from limestone,

chalk, dolomite and flint. The major vegetation types found in this soil are *Anabasis articulata* and *Zygophyllum*. The current land use is restricted to winter crops grown by Bedouins in some valleys. The American great group classification that represents this soil association is Haplargids (Isaac *et al.*, 1995).

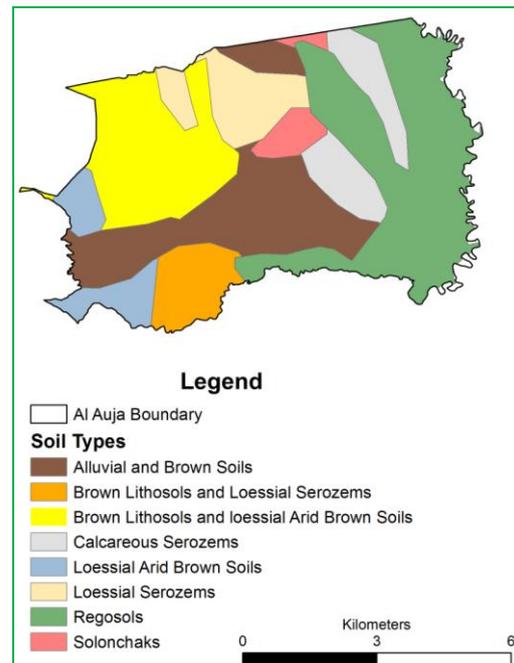
### 8. Loessial Arid Brown Soils:

This type found also in Al 'Auja, covering an area of about 5,886 dunums (ARIJ, 2013). The soil is formed originally from conglomerate and/or chalk and mainly found on gently sloping plateaux as well as dissected plateaux with locally hilly topographic. The major vegetation type found in this region is *Archillea santolina*, and the main current land use consist of various field crops and some horticultural crops planted as irrigated crops. The American great group classifications that represent this soil association are Palexeralfs, Haploxeralfs and Xerochrepts (Isaac *et al.*, 1995).

Map 1: Jericho Soil Map



Map 2: Al- Auja Soil Map



### 3. References

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